

OFFICIAL

U.S. Application Serial No. 09/641,595
Claims 1-15 as originally filed

Page 1 of 3

1. A method for printing on a thermoplastic material comprising the steps of:
 - applying by electrographic means a coloring agent having thermoplastic toner particles to the thermoplastic material;
 - bringing the thermoplastic material into a reactive state; and
 - hardening the thermoplastic material thereby establishing a permanent bond between the coloring agent and the thermoplastic material.
2. The method of claim 1 wherein only a surface portion of the thermoplastic material is brought into a reactive state.
3. The method of claim 1 wherein the coloring agent is applied by an electrostatic means.
4. The method of claim 1 wherein the toner and material are brought to a malleable state.
5. The method of claim 1 wherein the toner and material are brought to a fluid state.
6. The method of claim 2 wherein the surface portion of the thermoplastic material is brought to a malleable state by means of thermal energy.
7. The method of claim 2 wherein the surface portion of the thermoplastic material is brought to a fluid state by means of thermal energy.
8. The method of claim 1 further comprising:
 - processing the thermoplastic material in a heated molding machine;
 - applying heat to at least the surface of the thermoplastic material to produce the reactive state;
 - maintaining at least the surface of the thermoplastic material in the reactive state; and
 - applying toner to the surface to be printed.

U.S. Application Serial No. 09/641,595
Claims 1-15 as originally filed

Page 2 of 3

9. The method of claim 1 further comprising:
- heating the thermoplastic material in a molding machine;
 - hardening the thermoplastic material;
 - warming the hardened thermoplastic material in a warming device; and
 - bringing the thermoplastic material into the reactive state at least in regions of its surface.
10. The method of claim 8 wherein the toner is brought to the reactive state by means of a warming device.
11. The method of claim 8 wherein:
- the surface of the material to be printed is in the reactive state;
 - the toner is applied to the surface of the heated material to be printed; and
 - the toner is brought to the reactive state by the material.
12. The method of claim 1 further comprising the steps of:
- processing the thermoplastic material in a heated molding machine;
 - hardening the thermoplastic material;
 - bringing the toner into the reactive state in a warming device;
 - applying the toner to the surface of the material to be coated; and
 - partially bringing the surface of the heated toner to the reactive state.
13. The method of claim 1 wherein:
- following the bonding of the coloring agent to the surface of the thermoplastic material;
 - placing the thermoplastic material and the coloring agent in a cooling section; and
 - bringing the thermoplastic material into a hardened state.

U.S. Application Serial No. 09/641,595
Claims 1-15 as originally filed

Page 3 of 3

14. The method of claim 1 wherein the coloring agent is sunk into the surface of the thermoplastic material to form a smooth surface structure.

15. The method of claim 1 wherein the thermoplastic toner particles are of the same thermoplastic material as the surface of the material to be coated.